

Preparation and characterization of furfuryl alcohol derived carbon coated monolith

Abstract

This paper reports the preparation and characterization of activated carbon coated monolith. The carbons have been prepared based on furfuryl alcohol (FA) added with or without poly ethylene glycol (PEG-600) as a pore forming agent. The carbon coated monoliths are characterized by thermo-gravimetical analysis, elemental analysis, scanning electron microscopy, and textural analysis. The carbon content of the materials is found to be about 75 wt % and the thickness of carbon coated monolith measured by scanning electron microscopy (SEM) is of $\sim 38 \mu\text{m}$. The carbon sourced from only FA exhibits adsorption Type I, whilst the carbon sourced from FA + PEG-600 is of Type IV. Brunauer, Emmett, and Teller (BET) surface areas measured by N_2 adsorption are 362.71 and 341 m^2/g carbon, respectively. Total pore volume of the samples FA and FA + PEG-600 are 0.2 and 0.38 m^3/g carbon, respectively.

Keyword: Characterization; Carbon coated monolith; Furfuryl alcohol